

REMARKS/ARGUMENTS

Claims 1-22 are pending. Claims 21-22 were withdrawn from consideration and have been cancelled without prejudice. Claims 1, 7 and 20 have been amended, and new Claims 23-27 have been added. No new matter is added.

Examiner's Interview

Applicants appreciate the Examiners' time and consideration during the Interview held on July 22, 2008. During the Interview, Applicants' representative and Examiners Mok and Tamai discussed Claims 1 and 20 and the teachings of the prior art, U.S. Patent Nos. 4,710,795 ("Nippert") and 6,697,257 (which issued from the U.S. national application corresponding to International (PCT) Publication No. WO 01/27997 ("Wolf")). As discussed in the Examiner's Interview Summary and as discussed below in more detail, Applicants' representative provided arguments as to why the cited prior art does not teach or suggest the subject matter of the claims. Agreement was not reached on the claims.

Claim Rejections

The Examiner rejected Claims 1, 3-4, 6, 12-16 and 18-20 under 35 U.S.C. §103 as being obvious over Nippert in view of Wolf. Also, the Examiner rejected Claims 2 and 10 as being obvious over Nippert in view of Wolf and further in view of U.S. Patent No. 6,060,795 ("Azotea"). In addition, the Examiner rejected Claim 5 as being obvious over Nippert in view of Wolf and further in view of U.S. Patent No. 6,274,955 ("Satoh"). Further, the Examiner rejected Claim 7 as being obvious over Nippert in view of Wolf and further in view of U.S. Patent No. 5,697,811 ("Pickles"). Also, the Examiner rejected Claim 8 as being obvious over Nippert in view of Wolf and further in view of U.S. Patent Publication No. 2003/0080772 ("Giacomini"). In addition, the Examiner rejected Claim 9 as being obvious over Nippert in view of Wolf and further in view of U.S. Patent Publication No. 2003/0128080 ("Viswanathan"). Further, the Examiner rejected Claim 11 as being obvious over Nippert in view of Wolf and further in view of U.S. Patent No. 6,440,750 ("Feygenson"). Finally, the Examiner rejected Claim 17 as being obvious over Nippert in view of Wolf and further in view of U.S. Patent No. 6,327,332 ("Weber"). Reconsideration of the rejections is respectfully requested.

Independent Claim 1

Amended independent Claim 1 defines an electric motor (10) for adjusting moving parts in a motor vehicle, comprising an electronic unit (70) with a sandwich construction, which contains a first electrically conductive substrate (71) and a second electric conductive substrate (72), between which power components (75) are located and electrically connected to both substrates (71, 72), and a side (84) of the second substrate (72) facing away from the first substrate (71) is equipped with additional electronic components (56), wherein the first substrate (71) as a punched grid (44) punched from a metal material, which together with the second substrate (72) is extrusion coated with and encapsulated by a plastic body (95) produced by injection molding in such a way that extensions (97) of the punched grid (44) protrude from the plastic body (95), forming an electrical and/or mechanical interface (98) for connecting additional motor components (99, 38, 40, 104, 102, 80).

As discussed during the Interview, Nippert discloses a semi-conductor power module including substrates (base plate 2 and cover plate 3) which are metallized by direct bonding with copper or ceramic. The metallized surfaces are etched with the desired run structure. A plastic housing can be placed over the cover plate 3 and cemented to the outer edge of the base plate 2.

As discussed during the Interview, Nippert does not teach or suggest, among other things, an electric motor including an electronic unit containing a first substrate as a punched grid punched from a metal material. Rather, Nippert discloses that the substrates (plates 2, 3) are metallized by direct bonding with copper and etched to provide the desired run structure. As also discussed during the Interview, Nippert does not teach or suggest encapsulation by a plastic body produced by injection molding. Rather, Nippert discloses that a plastic housing can be placed over the cover plate 3 and cemented to the outer edge of the base plate 2. For at least these independent reasons, Nippert does not teach or suggest the subject matter of Claim 1.

As discussed during the Interview, Wolf does not cure the deficiencies of Nippert. Wolf discloses a power semiconductor module including carrier substrates 1, 2, 3 which each include a metal plate 11, 12, 13 forming conductor tracks 31-36. To form the substrates, a thin metal layer is applied onto each insulating layer 21-24. In one embodiment (see Figs. 1*b* and 1*d*), an encompassing wall 70, for example, of metal foil, is secured to the substrates by gluing or soldering. In another embodiment (see Fig. 3*b*), an elastically resilient central layer 90 is provided, and the module is inserted into a cooling body 95 by compressing the layer 90. In

another embodiment (see Fig. 4), a wall 100 of an injection molding composition 101 is applied to only the face ends 15-17 of the substrates 1, 2, 3. The outer substrates 1, 3 are cooled directly by a coolant.

As also discussed during the Interview, Wolf does not teach or suggest, among other things, an electric motor including an electronic unit containing a first substrate as a punched grid punched from a metal material. Rather, Wolf discloses that each substrate 1, 2, 3 includes a metal plate 11, 12, 13 and that, to form the substrates, a thin metal layer is applied to an insulating layer. Wolf also does not teach or suggest the punched grid together with the second substrate being extrusion coated with and encapsulated by a plastic body produced by injection molding. Rather, Wolf discloses that, at most, only the face ends 15-17 of the substrates 1, 2, 3 are covered by a wall 100 of injection molding compound 101 and that the outer substrates 1, 3 are cooled directly by a coolant. Applicants respectfully submit that this direct cooling of the outer substrates 1, 3 could not be provided if the outer substrates 1, 3 were encapsulated in the injection molding compound 101, as claimed. For at least these independent reasons, Wolf also does not teach or suggest the subject matter of Claim 1.

Therefore, Nippert and Wolf, alone or in combination, do not teach or suggest each and every limitation set forth in Claim 1. Accordingly, independent Claim 1 is allowable.

Dependent Claims 2-19 and new dependent Claims 23-27 depend from independent Claim 1 and are allowable for at least the same and other independent reasons. In addition, the additional subject matter defined by the dependent claims, for example, by dependent Claims 23-27, provide separate bases for allowance.

New dependent Claim 23 specifies that the punched grid is formed from a copper sheet by means of punching, bending and embossing. New dependent Claim 24 specifies that the first substrate is formed of segments connected as a contiguous part and that, after encapsulated in the plastic body, the segments are separated by punching. Applicants respectfully submit that the cited prior art does not teach or suggest the additional subject matter defined by dependent Claim 23 or by dependent Claim 24.

New dependent Claim 25 specifies that plastic molding compound of the plastic body is arranged in gaps and voids between the substrates and the power components. New dependent Claim 26 that plastic molding compound of the plastic body encapsulates the punched grid, the second substrate, the power components, and the electronic components. New dependent Claim

27 specifies that plastic molding compound of the plastic body covers the side of the second substrate and a side of the punched grid facing away from the second substrate. Applicants respectfully submit that the cited prior art does not teach or suggest the additional subject matter defined by dependent Claim 25, by dependent Claim 26 or by dependent Claim 27.

Independent Claim 20

Amended independent Claim 20 defines an electronic module (70) in a sandwich construction, comprising a first electrically conductive substrate (71) and a second electric conductive substrate (72), between which power components (75) are located and electrically connected to both substrates (71, 72), and a side (84) of the second substrate (72) facing away from the first substrate (71) is equipped with additional electronic components (56), wherein the first substrate (71) is a punched grid (44) punched from a metal material, which together with the second substrate (72) is extrusion coated with and encapsulated by a plastic body (95) produced by injection molding, in such a way that the extensions (97) of the punched grid (44) protrude from the plastic body (95), forming an electrical and/or mechanical interface (98) for connecting additional motor components (99, 38, 40, 104, 102, 80).

As discussed during the Interview, Nippert does not teach or suggest, among other things, an electronic module including a first substrate which is a punched grid punched from a metal material. Rather, Nippert discloses that the substrates (plates 2, 3) are metallized by direct bonding with copper and etched to provide the desired run structure. As also discussed during the Interview, Nippert does not teach or suggest encapsulation by a plastic body produced by injection molding. Rather, Nippert discloses that a plastic housing can be placed over the cover plate 3 and cemented to the outer edge of the base plate 2. For at least these independent reasons, Nippert does not teach or suggest the subject matter of Claim 20.

As discussed during the Interview, Wolf does not cure the deficiencies of Nippert. Wolf does not teach or suggest, among other things, an electronic module including a first substrate which is a punched grid punched from a metal material. Rather, Wolf discloses that each substrate 1, 2, 3 includes a metal plate 11, 12, 13 and that, to form the substrates, a thin metal layer is applied to an insulating layer. Wolf also does not teach or suggest the punched grid together with the second substrate being extrusion coated with and encapsulated by a plastic body produced by injection molding. Rather, Wolf discloses that, at most, only the face ends 15-

17 of the substrates 1, 2, 3 are covered by a wall 100 of injection molding compound 101 and that the outer substrates 1, 3 are cooled directly by a coolant. Applicants respectfully submit that this direct cooling of the outer substrates 1, 3 could not be provided if the outer substrates 1, 3 were encapsulated in the injection molding compound 101, as claimed. For at least these independent reasons, Wolf also does not teach or suggest the subject matter of Claim 20.

Therefore, Nippert and Wolf, alone or in combination, do not teach or suggest each and every limitation set forth in Claim 20. Accordingly, independent Claim 20 is allowable.

CONCLUSION

In view of the foregoing, Applicants respectfully request entry of the present Amendment and allowance of Claims 1-20 and 23-27.

If additional consultation will further prosecution, the undersigned is available during normal business hours at the below-identified telephone number.

Respectfully submitted,

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